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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/700,343	11/03/2003	Murali Sethumadhavan	RGP-0088	5279

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EXAMINER

LAM, CATHY FONG FONG

ART UNIT	PAPER NUMBER
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1775

DATE MAILED: 09/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/700,343

Applicant(s)

SETHUMADHAVAN ET AL.

Examiner

Cathy Lam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address.

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 02-05-2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

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1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-19, drawn to an electrical circuit laminate, classified in class 428, subclass 209.
 - II. Claim 20, drawn to a method of making an electrical circuit substrate, classified in class 427, subclass 96.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by a different process such as by dispersing flame retardant fillers, fluoropolymer particles and curing agent/crosslinking agents into a liquid resin, then dip coating the glass fiber web into the liquid resin. Place copper foils onto the surfaces of the prepreg while it is in a semicured stage. Cure the laminate.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Atty: Leah Reimer on August 26, 2004 a provisional election was made without traverse to prosecute the invention of group I, claims 1-19. Affirmation of this election must be made by applicant in replying to this

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Office action. Claim 20 is withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over St. Lawrence et al (US 5972811) in view of Nakacho et al (US 6528559).

St. Lawrence discloses an electrical substrate laminate comprised of a prepreg and conductive layer(s) (46,46') (Fig. 2).

The conductive layers are copper foils, laminated onto both surfaces of the prepreg (col 4 L 43-49 & col 6 L 45).

The prepreg is comprised of a copolymer of butadiene and isoprene in a ratio between 1:9 and 9:1 (col 6 L 37-39). The polybutadiene and polyisoprene resins can be a liquid resin which is a low molecular weight polymer (col 5 L 24-32).

The prepreg further comprised of a corsslinking agent, a filler, a curing agent and a flame retardant (col 5 L 16-19).

The filler can be particulates such as polytetrafluoroethylene (col 14 L 27). A glass woven web is reinforced into the liquid resin (col 7 L 66-67). The curing agent such as dicumyl peroxide, t-butylperbenzoate, etc. and the fire retardant additive such as a halogen containing compound, are all incorporated into the resin material (col 8 L 22-37). A free radical curable polymer such as acrylate monomer (as a crosslinking agent) can be used to cure the resin (col 6 L 46-49).

St. Lawrence discloses the present invention but is silent about having any magnesium hydroxide used as a fire retardant in the prepreg.

Nakacho discloses a halogen free flame retardant that is incorporated into a resin composition. The resin composition is moldable and used in electronic products.

Nakacho's resin composition has a rating of V-0 in a flame retardancy test UL-94 (col 2 L 5-7).

The halogen free flame retardant can be magnesium hydroxide (col 1 L 44-45). The resin composition can be a mixture of polyisoprene and polybutadiene, further comprised of a fluorine containing resin (col 8 L 34-38 & col 5 L 59-60). The flame retardant is in an amount of 0.1-50 wt% per 100 wt% of the resin (col 5 L 51-54).

Furthermore, a glass fiber can be incorporated into the resin composition (col 9 L 38).

In view of the prior art teachings, one skill in the art would substitute magnesium hydroxide to be the flame retardant material because inorganic metal hydroxides do not

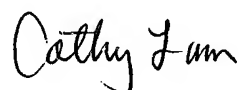
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reduce the molecular weight of the resin thus improve mechanical properties and heat resistance of the resin (Nakacho, col 2 L 60-63).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cathy Lam whose telephone number is (571) 272-1538. The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Cathy Lam
Primary Examiner
Art Unit 1775

cfl
August 30, 2004